AMBIENT AIR MONITORING NETWORK PLAN

2016

STATE OF NEVADA
DIVISION OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY PLANNING

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Acronyms and Abbreviations

AADT:	Annual Average Daily Traffic
AQS:	Air Quality System
BAQP:	Bureau of Air Quality Planning
BAM:	Beta Attenuation Monitor
CFR:	Code of Federal Regulations
CO:	Carbon Monoxide
DCNR:	Department of Conservation and Natural Resources
FEM:	Federal Equivalent Method
FRM:	Federal Reference Method
IMPROVE:	Interagency Monitoring of Protected Visual Environments
MADT:	Monthly Average Daily Traffic
MOU:	Memorandum of Understanding
MSA:	Metropolitan Statistical Area
NAAQS:	National Ambient Air Quality Standard
NAC:	Nevada Administrative Code
NDEP:	Nevada Division of Environmental Protection
O_3:	Ozone
Pb:	Lead
PM:	Particulate Matter (2.5 or 10 microns)
POC:	Pollutant Occurrence Code
PWEI:	Population Weighted Emission Index
QAPP:	Quality Assurance Project Plan
QMP:	Quality Management Plan
SLAMS:	State and Local Air Monitoring Station
SPMS:	Special Purpose Monitoring Station
USEPA:	United States Environmental Protection Agency

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Overview

The monitoring program of the Nevada Division of Environmental Protection Bureau of Air Quality Planning (NDEP-BAQP) operates an ambient air quality monitoring network of gaseous and particulate pollutant monitors. The monitors are located in small communities throughout rural Nevada. In the metropolitan areas of Reno and Las Vegas, the Washoe County District Health Department, Air Quality Management Division and the Clark County Department of Air Quality and Environmental Management operate and maintain their respective monitoring networks separate from the NDEP-BAQP. Those agencies submit their Network Plans independently to the United States Environmental Protection Agency (USEPA). Also, there are several federally recognized tribes that conduct air monitoring within Nevada and submit their own Annual Network Plans to the USEPA.

The NDEP Bureaus of Air Quality Planning and Air Pollution Control regulate air quality to protect public health and the environment. Monitoring data is a crucial component of regulations used to determine compliance with the USEPA primary and secondary air quality standards. Other important uses of these monitors include support and issuance of air quality forecasts; support of long-term health assessments; and tracking long-term air quality both to gauge effectiveness of emission control and abatement strategies and to quantify accuracy of ambient pollutant monitoring.

Goals

The NDEP-BAQP created an ambient air quality monitoring program to provide useful and accurate information on air quality, which is used to evaluate the success of the State's air quality programs. The Clean Air Act of 1970 and subsequent amendments require the USEPA to define national ambient air quality standards (NAAQS) for various air pollutants necessary to protect the public from injurious pollution concentrations. Air pollution concentrations that exceed the NAAQS can cause a public health hazard, or cause damage to flora, fauna and personal property.

The NAAQS, published by the USEPA, can be found in Title 40 of the Code of Federal Regulations (CFR) Part 50. The NAAQS for each pollutant defines the levels of air quality necessary to protect human health and welfare. An area is considered to be in nonattainment for a pollutant if it has violated the NAAQS for that pollutant. The CFR includes procedures for

evaluating measured air quality against the NAAQS. State air quality standards can be found in Nevada Administrative Code (NAC) 445B.22097.

Background

The State of Nevada has four jurisdictions that independently manage their own air programs as designated by statute: Department of Conservation and Natural Resources (DCNR), NDEP-BAQP; Washoe County District Health Department, Air Quality Management Division; Clark County Department of Air Quality and Environmental Management; and various tribal agencies.

State agencies that conduct ambient air monitoring using State and Local Air Monitoring Stations (SLAMS) or Special Purpose Monitoring Stations (SPMS) must use Federal Reference Methods (FRM) or Federal Equivalent Methods (FEM) that comply with federal quality assurance requirements listed in 40 CFR 58, Appendix A. In conjunction with the Network Plan, a NDEP-BAQP quality assurance plan was developed to form the framework for planning, implementing, assessing and reporting work performed by the NDEP-BAQP and for implementing quality assurance and quality control protocols.

The QAPP defines the policies, procedures, specifications, standards, and documentation necessary to 1) provide data of adequate quality to meet monitoring objectives, and 2) minimize loss of air quality data due to malfunctions or out-of-control conditions. Along with the QAPP, the Quality Management Plan (QMP) describes the organizational structure, functional responsibilities of management and staff, lines of authority, and required interfaces between planning, implementing, assessing and reporting activities involving environmental data operations. The QAPP has been submitted to the USEPA for approval. The QMP was approved by USEPA on April 20, 2015.

Additionally, the NDEP-BAQP has developed ambient monitoring guidelines in order to ensure that ambient air quality data collected at regulated facilities in the State are of the highest quality and conform to federal requirements for quality assurance listed under 40 CFR 58.

Ambient air quality monitoring data must be certified on an annual basis as accurate and complete. The certification process begins with the complete submittal of all SLAMS data to the federal Air Quality System (AQS) for the calendar year. The 2014 data was submitted for

certification in April, 2015 and the 2015 data will be submitted by May 1, 2016. Submittal of precision and accuracy data into AQS for 2014 was accomplished in January, 2015. Submittal of precision and accuracy data into AQS for calendar year 2015 was accomplished in January, 2016.

Network Design

Air quality monitoring is represented by ten SLAMS and one SPMS for a total of eleven ambient air quality monitoring stations in Nevada under the jurisdiction of the NDEP-BAQP. As of January 1st 2016, ozone monitoring conducted by the NDEP-BAQP is done on an annual basis from January 1st to December 31st. There are three meteorological stations, one in Carson City, one in Pahrump, and one mobile tower that is deployed at various locations within the State. These meteorological stations are used to confirm local meteorological data.

In addition to the four independent monitoring networks managed by state and local agencies, air quality monitoring is conducted through the Interagency Monitoring of Protected Visual Environments (IMPROVE) network by the federal land management agencies. There are two IMPROVE monitoring sites in Nevada. One is at the Jarbidge Wilderness area and the other is at Great Basin National Park, Lehman Caves. The IMPROVE program is a cooperative measurement effort governed by a steering committee composed of representatives from federal and regional-state organizations. The IMPROVE monitoring program was established in 1985 to aid in the creation of state and federal implementation plans for the protection of visibility in federal Class I areas. In order to meet the site objectives, the IMPROVE site must meet the methodologies and quality assurance and quality control (QA/QC) procedures approved by the USEPA Regional Administrator. Utilizing the criteria set for the Jarbidge site, the NDEP-BAQP is able to satisfy the USEPA's regional and transport monitoring requirements. According to 40 CFR Part 58 Appendix D 4.7.3, "each state shall install and operate at least one $PM_{2.5}$ site to monitor for regional background and regional transport." The NDEP-BAQP utilizes the Jarbidge site to meet this particular requirement.

Table 1 shows the locations and types of monitors operated by NDEP.

Table 1: NDEP's Ambient Air Monitoring Network

Location	Ozone	PM_{10}	$PM_{2.5}$
Elko		1 (SLAMS)	
Fallon	1 (SLAMS)		
Fernley	1 (SLAMS)		
Carson City Armory	1 (SLAMS)		2 (SLAMS)
Pahrump-Church Site		1 (SLAMS)	
Pahrump-Manse Elementary		1 (SLAMS)	
Pahrump-Glen Oaks		1 (SLAMS)	
Pahrump-Linda Street		1 (SLAMS)	
Gardnerville Ranchos			1 (SPMS)
Total	**3**	**5**	**3**

SLAMS – State and Local Air Monitoring Station
SPMS – Special Purpose Monitor Station

Minimum Monitoring Requirements

The USEPA provides minimum site requirements to monitor for ozone (O_3) and particulate matter (PM) based on metropolitan statistical area (MSA) population (40 CFR Part 58, Appendix D). The NDEP-BAQP's air monitoring network meets or, in most cases, exceeds the minimum network requirements. The monitors currently operating in the NDEP-BAQP monitoring network are located in Carson City (O_3, $PM_{2.5}$), Fallon (O_3), Fernley (O_3), Pahrump (PM_{10}) and in Gardnerville ($PM_{2.5}$). Based on the MSA population in Carson City, NDEP-BAQP is required to and operates one ozone monitor and one $PM_{2.5}$ monitor. The four PM_{10} monitoring sites in Pahrump are required through a Memorandum of Understanding (MOU) between the NDEP, USEPA, Nye County and the Town of Pahrump. According to 40 CFR Part 58 Appendix D, Tables D-4 and D-5, sections 4.2, 4.3.2, 4.3.3, 4.4.2, 4.5, and based on the 2010 Revisions to Lead Ambient Air Monitoring Requirements (75 FR 81126 (Dec. 27, 2010)), 2010 SO_2 NAAQS Final Rule (75 FR 35520 (June 22, 2010)), and the 2010 NO_2 NAAQS Final Rule (75 FR 6474, 6502-6517 (Feb. 9, 2010), *as revised by* 78 FR 16184 (Mar. 14, 2013), the NDEP-BAQP is not required to have additional monitoring for these criteria pollutants. Based on the latest Census Bureau population estimates and SO_2 emissions for each county, the calculated Population Weighted Emission Index (PWEI) for all counties (within NDEP-BAQP's jurisdiction) combined is 21 million persons-tons per year. This PWEI value is well below the established 5,000 million persons-tons per year threshold; therefore SO_2 monitoring is not required within the NDEP's jurisdiction.

As a result of the elimination of lead (Pb) from gasoline, Pb concentrations in the ambient air are generally so low in the 15 rural counties (within the NDEP-BAQP's jurisdiction) that monitoring for Pb is not necessary. In addition, the revised monitoring requirements for the Pb NAAQS now require Pb monitoring near sources such as industrial facilities that emit one-half ton or more of Pb per year and at NCORE sites in Core Based Statistical Areas (CBSA) with populations greater than 500,000. 75 FR 81126 (Dec. 27, 2010). In Nevada's 15 rural counties, there are no sources that emit one-half ton or more of Pb per year and no CBSAs with populations greater than 500,000. NDEP discontinued monitoring for Pb in 1990.

Based on data obtained through special study monitoring in Carson City and Gardnerville, the NDEP-BAQP has established a $PM_{2.5}$ monitoring network. These sites will allow the NDEP-

BAQP to establish credible data to ascertain $PM_{2.5}$ conditions within both areas. The current classification of the Ranchos monitoring site is listed as a SPMS. Currently NDEP-BAQP has approximately 3 years of data and will be assessing the data to determine if this site needs to be reclassified as a SLAMS. By the end of 2016, a valid design value will be available.

Since the Carson City site is NDEP-BAQP's first $PM_{2.5}$ SLAMS monitor, 40 CFR part 58 Appendix A requires this site to be collocated. NDEP-BAQP has designated the primary monitor, at this site, as a continuous federal equivalent method and by designating this method the first collocated monitor must be a federal reference method. NDEP-BAQP uses a MetOne EFRM analyzer as the federal reference method analyzer.

Table 2: Collocation Requirements

Method Code	# Primary Monitors	# Required Collocated Monitors	# Active Collocated FRM Monitors	# Active Collocated FEM Monitors
116		1	1	
170	1			1

Based on 40 CFR 58 Appendix D, the NDEP-BAQP understands that it may not be required to have certain monitors (PM_{10}, $PM_{2.5}$) in the network. However, based on data from the various monitoring sites, the NDEP-BAQP believes that it is important to have these monitors for the well-being of the public's health. The following table outlines the monitors within the NDEP-BAQP ambient air monitoring network.

Table 3: Minimum Monitoring Requirements by Pollutant

Pollutant	Minimum # of Monitors Required	# of Monitors Active	# of Monitors needed	Location	MSA	County	County Pop. (2014)	Design Values
Ozone	3	3	0	Carson City	Reno-Carson City-Fernley CSA and Carson City Metropolitan Statistical Area (MSA)	Carson City	54,522	67 ppb (2013-2015)
				Fallon	Fallon Micropolitan Statistical Area (MSA)	Churchill	23,989	65 ppb (2013-2015)
				Fernley	Reno-Carson City-Fernley Combined Statistical Area (CSA) and Fernley Micropolitan Statistical Area (MSA)	Lyon	51,789	67 ppb (2013-2015)
Lead	0	0	0	N/A	N/A	N/A	N/A	N/A
SO_2	0	0	0	N/A	N/A	N/A	N/A	N/A
NO_2	0	0	0	N/A	N/A	N/A	N/A	N/A
PM_{10}	4	5	0	Elko (1)	Elko Micropolitan Statistical Area (MSA)	Elko	52,766	0.3 (2013-2015)
				Pahrump (4)	Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area (MSA)	Nye	42,282	Manse = 1.3 Church = 0.7 Glen Oaks = 0.7 Linda Street = 0.3 (2013-2015)
$PM_{2.5}$	0-1	2	0	Carson City	Reno-Carson City-Fernley CSA and Carson City Metropolitan Statistical Area (MSA)	Carson City	54,522	New Site (Available 2017)
$PM_{2.5}$	0-1	1	0	Gardnerville	Reno-Carson City-Fernley CSA and Gardnerville Ranchos Micropolitan Statistical Area (MSA)	Douglas	47,536	New Site (Available 2017)
Total	7-9	11	0					

ppb: parts per billion

Changes in Monitoring Network

After careful review of our monitoring network and review of the new ozone standard, NDEP-BAQP changed from seasonal ozone monitoring to year-round monitoring. This will allow for better understanding of our ozone challenges within the state. This change took affect beginning in January 2016.

Also, due to logistics, the NDEP-BAQP removed our current $PM_{2.5}$ analyzer (BGI PQ200) at the Carson City Armory and replaced it with a MetOne EFRM. The MetOne EFRM was recently designated as a Federal Reference Method and will create better efficiencies within our QC operations. This change took affect in April of 2016.

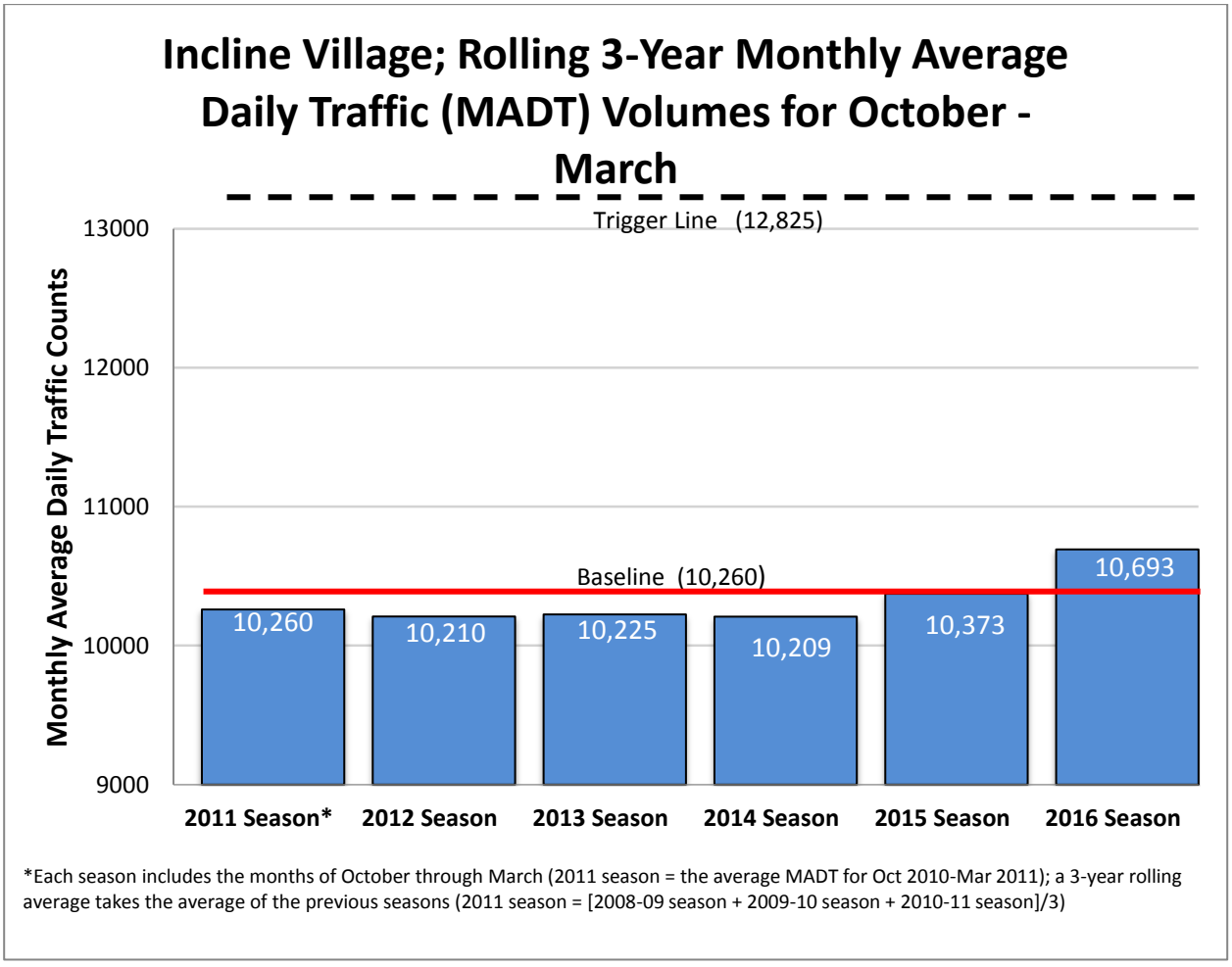
In the event that a review of changes to the $PM_{2.5}$ monitoring network is required, the annual network plan and five-year network assessment will be used to provide for this review. Aside from the equipment change at the Carson City Armory site, no additional changes are proposed to the $PM_{2.5}$ monitoring network for 2015-2016.

In addition, the NDEP-BAQP has discontinued CO monitoring at Stateline (located at Harvey's Resort and Hotel on Hwy 50) as of June 30, 2012. The NDEP-BAQP concludes that 33 years of clean data, all of it under 80 percent of the NAAQS and most recently at 34 percent, with on-going downward trends is sufficient evidence of continued attainment through 2024 and, together with the discussion and commitments in Section 3 of the 2012 Limited Maintenance Plan (submitted to EPA Region 9 in March of 2016), satisfies 40 CFR 58.14 requirements for discontinuance. Also, USEPA maintains that, ". . . regional office experience has demonstrated that CO monitors can be discontinued even if referenced in maintenance plans and SIPs." (EPA OAQPS power point presentation, "OAQPS Update on Emerging Monitoring Issues," by Chet Wayland and Lewis Weinstock, for WESTAR Council call, January 11, 2012)

Although CO monitoring has been discontinued, based on the 2012 Limited Maintenance Plan for the Nevada Side of the Lake Tahoe Basin, the NDEP-BAQP will conduct surrogate monitoring, and may also conduct actual monitoring. The NDEP-BAQP will use monthly average daily traffic (MADT) counts for its surrogate monitoring. The season for MADT will run from October 1st to March 31st of the next year. To use MADT as a surrogate CO monitoring

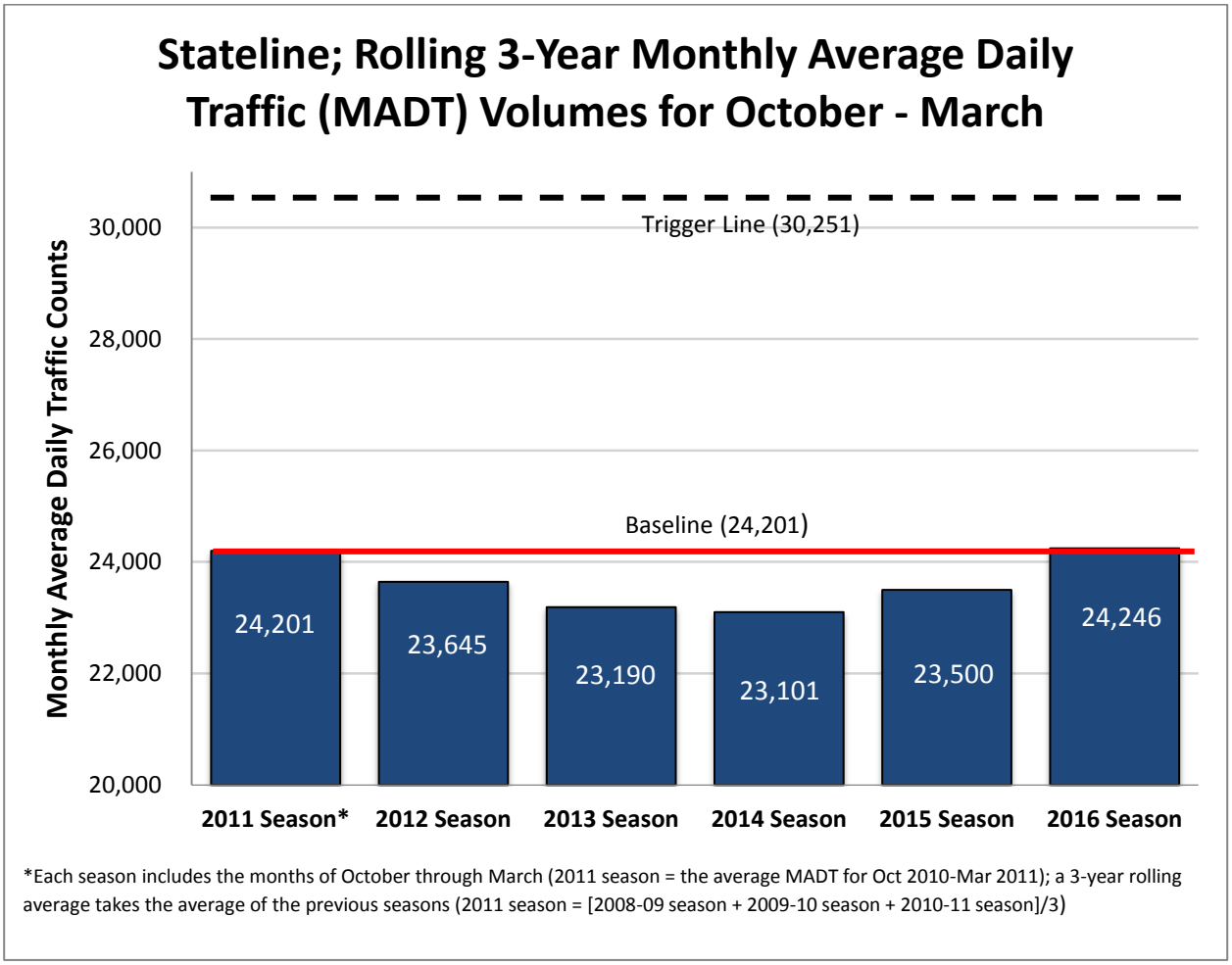
method, the NDEP-BAQP will conduct an annual review of the seasonal traffic volumes in the Basin using the data from the Nevada Department of Transportation's permanent automatic traffic recorders in Stateline and Incline Village. The NDEP-BAQP will compare the latest rolling 3-year average of the MADT volumes against the baseline MADT average established by the traffic volume data collected during the 2008-09, 2009-10 and 2010-11 seasons. The baseline traffic volumes calculated by averaging the three winter seasons, 2008-09 through 2010-11 are, 1) Stateline: 24,201; and 2) Incline Village: 10,260 (see Figures 1 and 2).

Figure 1: Incline Village Monthly Average Daily Traffic Counts



*Each season includes the months of October through March (2011 season = the average MADT for Oct 2010-Mar 2011); a 3-year rolling average takes the average of the previous seasons (2011 season = [2008-09 season + 2009-10 season + 2010-11 season]/3)

Figure 2: Stateline Monthly Average Daily Traffic Counts



If the MADT count increases by more than 25 percent when comparing the most recent, consecutive rolling 3-year averaging period to the baseline period, at either the Stateline or the Incline Village monitor, then the state will conduct a CO monitoring study alongside the surrogate MADT method during the period October 1st through March 31st immediately following the MADT review, using the Harvey's SLAMS monitor to determine the actual CO levels in the ambient air. The NDEP-BAQP retains the monitoring station at Stateline (located at Harvey's Resort and Hotel on Hwy 50) intact, so that monitoring can be resumed soon after it is triggered. The NDEP-BAQP commits to having the necessary equipment available to meet the timeframe for resumed monitoring.

Initial trigger levels are 30,251 for the Stateline MADT and 12,825 for the Incline Village MADT. If the percent increase does not exceed 25 percent, then it will be assumed that the ambient CO concentrations in the affected area have remained relatively unchanged. The rolling

3-Year MADT volume for October-March 2016 is 24,246 for Incline Village and 24,246 for Stateline. The percent increase over the last 3-year rolling average for the two stations is 0.19% and 4.22% in Stateline and Incline Village, respectively; neither meets the threshold for actual monitoring.

Purpose of Monitors

The purpose of the Nevada Air Monitoring Network is to provide useful and accurate information on air quality, which is used to evaluate the success of the State's air quality programs. To accomplish this task, the NDEP-BAQP utilizes the NAAQS for each criteria pollutant set forth in the Clean Air Act: Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide (NO_2), Ozone (O_3), coarse and fine particulate matter (PM_{10} and $PM_{2.5}$), and Sulfur Dioxide (SO_2).To accomplish this task, the NDEP-BAQP utilizes the NAAQSs of measured criteria pollutants set forth in the Clean Air Act to assess air quality status and potentially identify areas in the state as either attainment or nonattainment.

The NAAQS are broken down into primary and secondary standards. Primary standards are those established to protect public health. Secondary standards are those established to protect the public welfare from adverse pollution effects on soils, water, vegetation, man-made materials, animals, weather, visibility, climate, property, and the economy. The scientific criteria upon which the standards are based are reviewed periodically by the USEPA, which may reestablish or change the standards according to its findings.

A pollutant measurement that is greater than the ambient air quality standard for its specific averaging time is called an exceedance. An exceedance is not necessarily a violation; for each pollutant, there are specific rules about how many exceedances are allowed in a given time period before a pattern of exceedances is considered to be a violation of the NAAQS. A violation may result in regulatory action to improve the air quality in that area. Exceptions are made to allow for certain limited exceedances of the standard that may occur, for example, during exceptional events, such as an unusual weather pattern or wildfire. Regulatory action is typically reserved for cases where the exceedances are too large or too frequent and cause violation of the NAAQS.

Historically, ambient air quality monitoring by the NDEP-BAQP has looked at trends in air quality to aid in the local planning process. Traffic, wood burning stoves, and growth-related activities have prompted air quality monitoring in specific areas around the State. Data from these sites has led to public education and outreach to communities, identifying the potential health effects caused by air pollutants in the environment. Ordinances have also been developed and implemented to help control surface area disturbances and other related activities that produce dust.

Overview of Monitored Parameters

Ozone (O_3)

Ground-level ozone, or photochemical smog, is not emitted into the atmosphere as ozone, but rather is formed by the reactions of other pollutants. The primary pollutants entering into this reaction, volatile organic compounds (VOCs) and oxides of nitrogen, create ozone in the presence of sunlight. According to the USEPA, ozone is a strong irritant of the upper respiratory system and also causes damage to crops.

Particulate Matter (PM_{10})

Particulate matter with an aerodynamic diameter of 10 microns or less is emitted from transportation and industrial sources. According to the USEPA, exposure to particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

Fine Particulate Matter ($PM_{2.5}$)

Fine particulate matter with a diameter of 2.5 microns or less is created primarily from industrial processes and fuel combustion. According to the USEPA, these particles are breathed deeply into the lungs. Exposure to fine particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.

Site Map

Figure 3: A map showing the locations of the monitoring stations maintained in the NDEP-BAQP's network.

Elko: Detailed Site Information

Prior to 1992, the location for this sampler was the fire station at 723 Railroad Street (ID #32-007-003) in a commercial area. In November of 1992, this continuous PM_{10} monitoring site was relocated to the roof of the State offices at 850 Elm Street in a predominantly residential area. The monitoring objective was to determine typical concentration/population oriented. The manual sampler was replaced with a continuous Tapered Element Oscillating Microbalance (TEOM) PM_{10} monitor in December 1998. In September 2008, the TEOM monitor was closed and a new BAM 1020 monitor was sited at the Elko Grammar School #2.

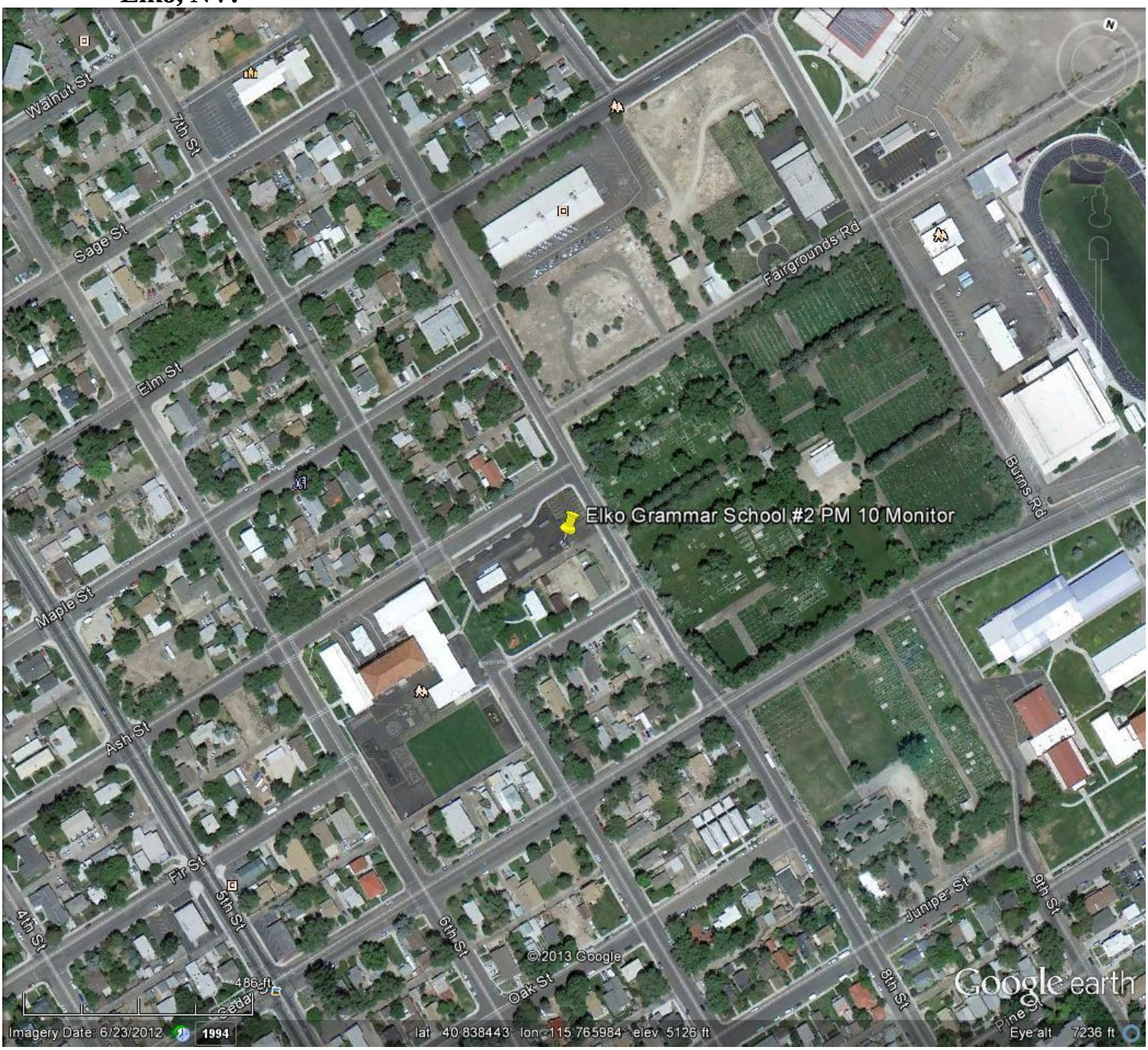
Site Name	**Elko**
AQS ID	**32-007-0005**
GIS Coordinates	**Lat +40.838350** **Long -115.766029**
Location	**Elko Grammar School #2**
Address	**1055 7th Street**
County	**Elko**
Distance to Road	**18 Meters**
Traffic Count	**2,600 AADT (2014) Station #0070208**
Groundcover	**Asphalt**
Representative Area	**Elko Micropolitan Statistical Area**

Pollutant, POC	**PM_{10}, 1**
Primary/QA Collocated/Other	**N/A**
Parameter Code	**81102**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Population exposure**
Monitoring type(s)	**SLAMS**
Network affiliation(s)	**N/A**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial Scale	**Neighborhood**
Monitoring start date	**09/25/2008**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0798-122**
Probe Height	**2.6 Meters**
Dist. fm. supporting structure	**Vertical Distance =2.1 meters**
Dist. fm. obstructions on roof	**No obstructions on/near the roof**
Dist. fm. Obstructions not on roof (meters)	**9 meters**
Dist. fm. trees	**27 Meters**
Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors in (meters)	**N/A**
PM instrument within 1 m of the lovol (flow rate <200 liters/minute)	**N/A**

Elko: Detailed Site Information (Cont.)

PM instrument within 2 m of the hivol (flow rate >200 liters/minute	**N/A**
Unrestricted air flow	**360 degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for annual $PM_{2.5}$ comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**04/28/2015, 10/29/2015**

Figure 4: PM_{10} Monitor located at Elko Grammar School #2, 1055 7th Street, Elko, NV.



Fallon: Detailed Site Information

The ozone monitoring site at 280 South Russell Street is at the West End Elementary School in a residential neighborhood that may be affected by agricultural operations surrounding the City of Fallon. The monitoring objective is to determine typical concentration/population oriented and transport downwind of Reno and Fernley.

Pollutant, POC	**Ozone, 1**

Site Name	**Fallon**
AQS ID	**32-001-0002**
GIS Coordinates	**Lat +39.472471** **Long -118.783624**
Location	**West End Facility**
Address	**280 South Russell Street**
County	**Churchill**
Distance to Road	**65 Meters**
Traffic Count	**300 AADT (2014) Station #0010135**
Groundcover	**Dirt and Gravel**
Representative Area	**Fallon Micropolitan Statistical Area**

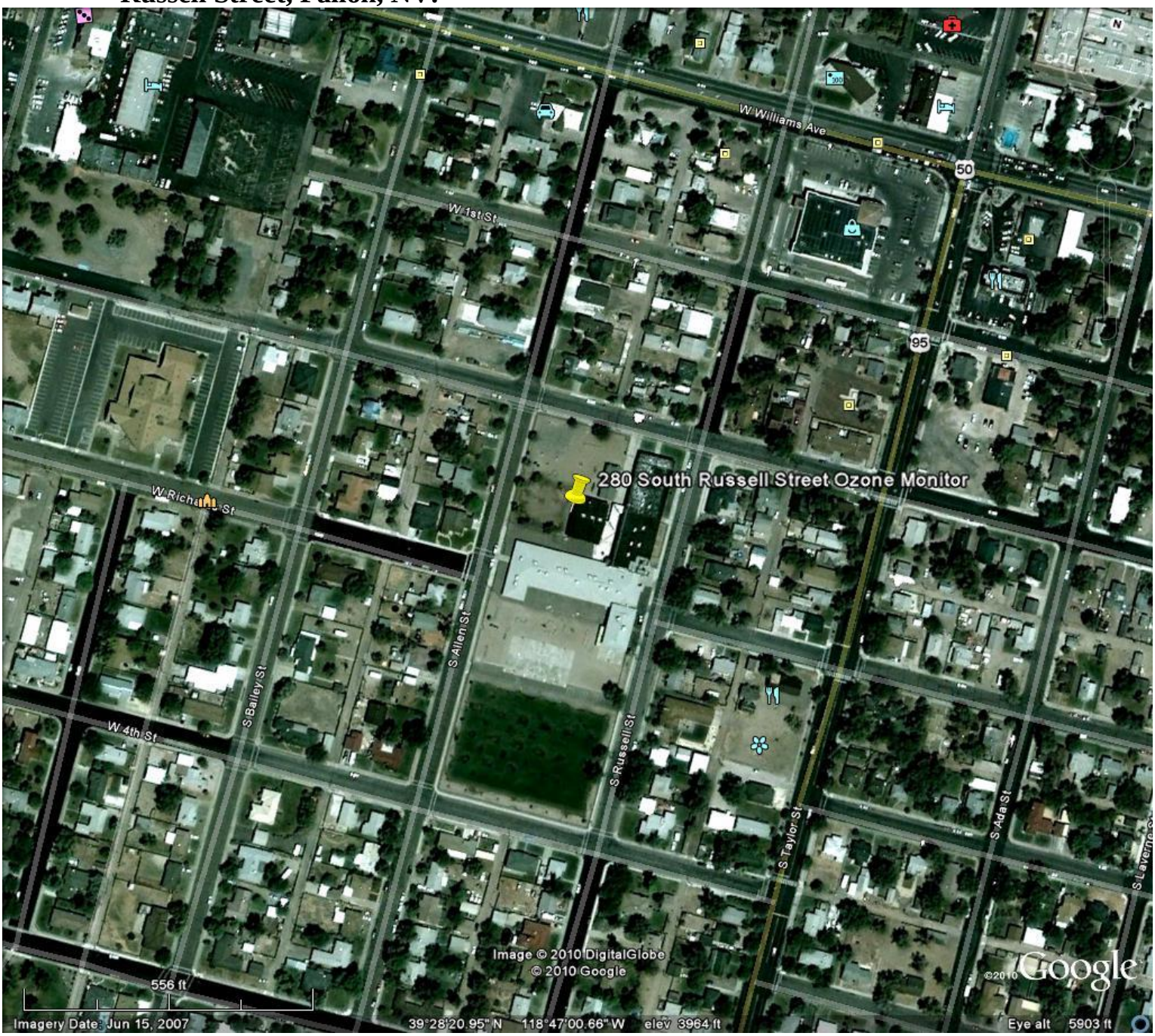
Primary/QA Collocated/Other	**N/A**
Parameter Code	**44201**
Basic monitoring objective(s)	**NAAQS**
Site type(s)	**Population Exposure**
Network affiliation(s)	**N/A**
Monitor type(s)	**SLAMS**
Instrument manufacturer and model	**Teledyne API Model 400 Series**
Method Code	**087**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial Scale	**Neighborhood**
Monitoring start date	**10/01/1999**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQOA-0992-087**
Probe Height	**2.5 Meters**
Dist. fm. supporting structure	**2 meters from wall**
Dist. fm. obstructions on roof	**No obstructions on/near the roof**
Distance from obstruction not on roof (meters)	**22 Meters**
Distance fm. trees	**Greater than 10 meters**
Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors (meters)	**N/A**
PM instrument within 1 m of the lovol (flow rate <200 liters/minute)	**N/A**

Fallon: Detailed Site Information (Cont.)

PM instrument within 2 m of the hivol (flow rate >200 liters/minute)	**N/A**
Unrestricted airflow	**180 Degrees ***
Probe material	**Teflon**
Residence time	**4.99 seconds**
Changes in the next 18 months?	**No**
Suitable for annual PM 2.5 comparison?	**N/A**
Frequency of flow rate verification Manual PM	**N/A**
Frequency of flow rate verification automated PM	**N/A**
Frequency of one point QC check (gaseous)	**Every two weeks**
Last Annual Performance Evaluation (Gaseous)	**09/17/2015**
Last two semi-annual flow rate audits for PM	**N/A**

*Monitoring path (arc) is located on the predominant windward side of the building and is at least 1 meter away from the supporting structure. The path has an unrestricted airflow of at least 180 degrees.

Figure 5: Ozone Monitor located at West End Elementary School, 280 S. Russell Street, Fallon, NV.



Fernley Intermediate School: Detailed Site Information

Ozone monitoring is done at the Fernley Intermediate School, which is located at 320 Hardie Lane. This is an area of mainly residential and agricultural use. However, there has recently been a large growth of industry both upwind and downwind of this site. Ozone monitoring (SPMS) was previously conducted at the Fernley Volunteer Fire Department starting in October 1997 and discontinued in October 2003. Ozone monitoring began at this site in July 2007. Monitoring for PM_{10} at this site commenced on May 1995 to determine the agricultural and industrial source impacts and population exposure. PM_{10} sampling was discontinued in November 1998.

Site Name	**Fernley**
AQS ID	**32-019-0006**
GIS Coordinates	**Lat +39.602787** **Long -119.247741**
Location	**Fernley Intermediate School**
Address	**320 Hardie Lane**
County	**Lyon**
Distance to Road	**119 Meters**
Traffic Count	**7,200 AADT (2014) Station # 0190022**
Groundcover	**Paved, cement, gravel and dirt**
Representative Area	**Reno-Carson City-Fernley Combined Statistical Area (CSA) and Fernley Micropolitan Statistical Area**

Pollutant, POC	**Ozone, 1**
Primary/QA Collocated/Other	**N/A**
Parameter Code	**44201**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Population Exposure**
Network affiliation(s)	**N/A**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Teledyne API Model 400 Series**
Method Code	**087**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial Scale	**Neighborhood**
Monitoring start date	**07/06/2007**
Current sampling frequency	**Annual**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQOA-0992-087**
Probe Height	**7 meters**
Dist. fm. supporting structure	**Vertical Distance above 2.1 meters**
Dist. fm. obstructions on roof	**No obstructions on/near the roof**
Dist. fm. Obstructions not on roof (meters)	**N/A**
Dist. fm. trees	**15 Meters**
Distance to furnace or incinerator flue	**N/A**

Fernley Intermediate School: Detailed Site Information (Cont.)

Distance between collocated monitors in (meters)	**N/A**
PM instrument within 1 m of the lovol (flow rate <200 liters/minute	**N/A**
PM instrument within 2 m of the hivol (flow rate >200 liters/minute	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Teflon**
Residence time	**10.0 Seconds**
Changes in the next 18 months?	**No**
Suitable for annual PM 2.5 comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**N/A**
Frequency of one point QC check (gaseous)	**Every two weeks**
Last Annual Performance Evaluation (gaseous)	**09/17/2015**
Last two semi-annual flow rate audits for PM	**N/A**

Figure 6: Ozone Monitor located at Fernley Intermediate School, 320 Hardie Lane Fernley, NV.

2601 S. Carson Street: Detailed Site Information

Due to the city of Carson City re-purposing use of the old monitoring location on 3300 East Fifth Street, the new SLAMS monitoring site is now adjacent to Hwy 395, in a residential neighborhood and a light industrial area. The new collocated $PM_{2.5}$ and ozone monitoring site is located at 2601 S. Carson Street where the old Army National Guard site used to reside. The monitoring objective for $PM_{2.5}$ and ozone is to determine maximum concentration based on Appendix D CFR 58 (4.1) (b) for this site. The primary monitor at this site is the SLAMS BAM 1020 continuous monitor.

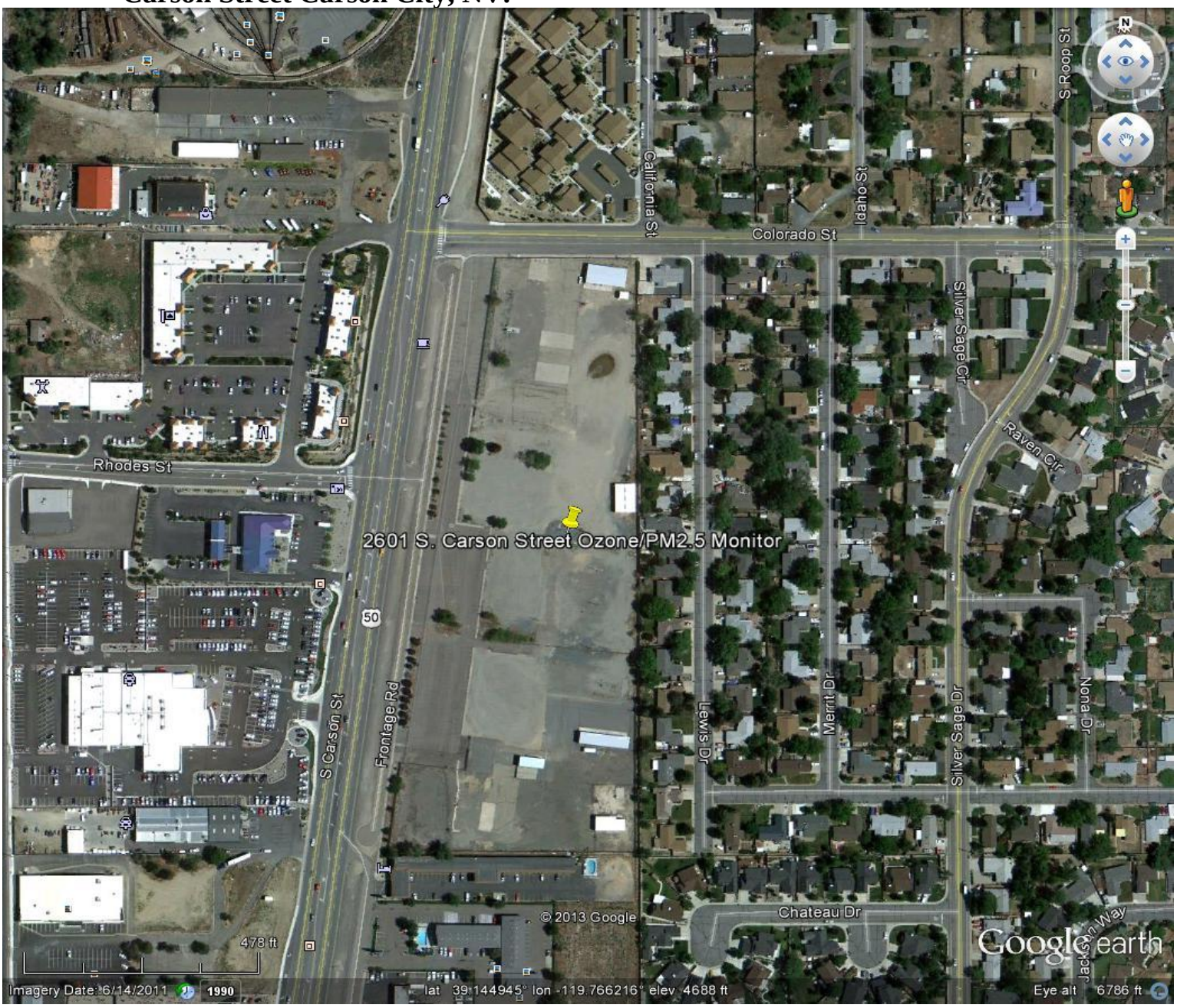
Site Name	**Carson City Armory**
AQS ID	**32-510-0020**
GIS Coordinates	**Lat +39.1447** **Long -119.7661**
Location	**Carson City**
Address	**2601 S. Carson Street**
County	**Carson City**
Distance to Road	**109 Meters**
Traffic Count	**44,500 AADT (2014) Station #0250148**
Groundcover	**Gravel**
Representative Area	**Reno-Carson City-Fernley CSA and Carson City Metropolitan Statistical Area (MSA)**

Pollutant, POC	**$PM_{2.5}$, 1**	**$PM_{2.5}$, 2**	**Ozone, 1**
Primary/QA Collocated/Other	**Primary**	**QA Collocated**	**N/A**
Parameter Code	**88101**	**88101**	**44201**
Basic monitoring objective(s)	**NAAQS**	**NAAQS**	**NAAQS**
Site type(s)	**Highest concentration**	**Highest concentration**	**Max 0_3 Concentration**
Network affiliation(s)	**N/A**	**N/A**	**N/A**
Monitor type(s)	**SLAMS**	**SLAMS**	**SLAMS**
Instrument manufacturer and model	**MET ONE BAM 1020**	**MET ONE EFRM , VSCC**	**TELEDYNE 400 Series**
Method Code	**170**	**116**	**087**
FRM/FEM/ARM/other	**FEM**	**FRM**	**FEM**
Collecting Agency	**NDEP-BAQP**	**NDEP-BAQP**	**NDEP-BAQP**
Analytical Lab	**N/A**	**Desert Research Institute**	**N/A**
Reporting Agency	**NDEP-BAQP**	**NDEP-BAQP**	**NDEP-BAQP**
Spatial Scale	**Neighborhood**	**Neighborhood**	**Neighborhood**
Monitoring start date	**04/01/2013**	**04/01/2016**	**04/01/2013**
Current sampling frequency	**Continuous (primary)**	**1:6**	**Annual**
Calculated sampling frequency	**N/A**	**N/A**	**N/A**
Sampling season	**01/01-12/31**	**01/01-12/31**	**01/01-12/31**
Analysis Method	**EQPM-0308-170**	**RFPS-0498-116**	**EQOA-0992-087**
Probe Height	**4.9 Meters**	**4.9 Meters**	**4 Meters**

601 S. Carson Street: Detailed Site Information (Cont.)

Dist. fm. supporting structure	**2.1 Meters**	**2.1 Meters**	**1 Meter**
Dist. fm. obstructions on roof	**No obstructions on/near the roof**	**No obstructions on/near the roof**	**No obstructions on/near the roof**
Distance from obstruction not on roof (meters)	**N/A**	**N/A**	**N/A**
Distance fm. trees	**37 Meters to West**	**37 Meters to the West**	**37 Meters to the West**
Distance to furnace or incinerator flue	**N/A**	**N/A**	**N/A**
Distance between collocated monitors (meters)	**3 Meters**	**3 Meters**	**N/A**
PM instrument within 1 m of the lovol (flow rate <200 liters/minute)	**No**	**No**	**N/A**
PM instrument within 2 m of the hivol (flow rate >200 liters/minute)	**N/A**	**N/A**	**N/A**
Unrestricted airflow	**360 Degrees**	**360 Degrees**	**360 Degrees**
Probe material	**N/A**	**N/A**	**Teflon**
Residence time	**N/A**	**N/A**	**4.6 Seconds**
Changes in the next 18 months?	**No**	**No**	**No**
Suitable for annual $PM_{2.5}$ comparison?	**Yes**	**Yes**	**N/A**
Frequency of flow rate verification Manual PM		**Monthly**	**N/A**
Frequency of flow rate verification automated PM	**Monthly**		**N/A**
Frequency of one point QC check (gaseous)	**N/A**	**N/A**	**Every two weeks**
Last Annual Performance Evaluation (Gaseous)	**N/A**	**N/A**	**09/24/2015**
Last two semi-annual flow rate audits for PM	**03/26/2015, 09/24/2015**	**03/26/2015, 09/24/2015**	**N/A**

Figure 7: Ozone/$PM_{2.5}$ Monitors located at Carson City Armory, 2601 S. Carson Street Carson City, NV.



Church: Detailed Site Information

The Church Site began operation in 2004 to complement the existing three other sites in the Pahrump monitoring network. Monitoring is accomplished with a continuous beta attenuated monitor located in the southeast corner of the Catholic Church. This site represents the southern-most monitoring location in Pahrump Valley. The monitoring objective of this site is a significant source of PM_{10}. The surrounding area is characterized by residential use with little commercial use, as well as some native desert with a mix of dirt and paved roads.

Site Name	**Church**
AQS ID	**32-023-0013**
GIS Coordinates	**Lat + 36.159639** **Long -115.996263**
Location	**Pahrump**
Address	**781 E. Gamebird**
County	**Nye**
Distance to Road	**100 Meters**
Traffic Count	**1,100 AADT (2014) Station #0230010**
Groundcover	**Desert**
Representative Area	**Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area**

Pollutant, POC	**PM_{10}, 1**
Primary/QA Collocated/Other	**N/A**
Parameter Code	**81102**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Population exposure – Dry lake bed 6 miles to the south**
Network affiliation(s)	**N/A**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial Scale	**Urban**
Monitoring start date	**02/14/2004**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0798-122**
Probe Height	**4 Meters**
Dist. fm. supporting structure	**Vertical distance above 2 meters**
Dist. fm. obstructions on roof	**No obstructions on/near the roof**
Dist. fm. Obstructions not on roof (meters)	**14 Meters**
Dist. fm. trees	**50 Meters**
Distance to furnace or incinerator flue	**N/A**

Church: Detailed Site Information (Cont.)

Distance between collocated monitors in (meters)	**N/A**
PM instrument within 1 m of the lovol (flow rate <200 liters/minute)	**N/A**
PM instrument within 2 m of the hivol (flow rate >200 liters/minute)	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for annual $PM_{2.5}$ comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**05/07/2015, 11/12/2015**

Figure 8: PM_{10} Monitor located at Church Site, 781 E. Gamebird Pahrump, NV.

Manse Elementary: Detailed Site Information

The Manse site represents the monitoring objective for the highest concentrations of PM_{10} in Pahrump. This site replaces the Community Pool site, which at the time it was operating, represented the highest concentrations of PM_{10} in Pahrump. Located at 1020 E. Wilson Road, the Manse Elementary site is located on the roof of the school and monitors for PM_{10} using the continuous beta attenuation monitor. The area adjacent to this site is characterized by mostly commercial use with some residential use, and is adjacent to the busiest activity area of Pahrump. This site is located downwind from residential construction developments that have cleared large parcels of ground for building, as well as agricultural areas that cultivate large areas of farm-ground and raise livestock. Roads surrounding this site are both paved and dirt.

Site Name	**Manse Elementary**
AQS ID	**32-023-0014**
GIS Coordinates	**Lat +36.212787** **Long -115.994802**
Location	**Pahrump**
Address	**1020 E. Wilson Road**
County	**Nye**
Distance to Road	**50 Meters**
Traffic Count	**11,000 AADT (2014) Station #0230006**
Groundcover	**Gravel Schoolyard**
Representative area	**Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area**
Pollutant, POC	**PM_{10}, 1**
Primary/QA Collocated/Other	**N/A**
Parameter Code	**81102**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Highest Concentration**
Network affiliation(s)	**N/A**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial Scale	**Middle**
Monitoring start date	**11/17/2005**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0798-122**
Probe Height	**6.0 Meters**
Dist. fm. supporting structure	**Vertical distance 2.7 meter**
Dist. fm. obstructions on roof	**No obstructions on/near the roof**
Dist. fm. Obstructions not on roof (meters)	**N/A**
Dist. fm. trees	**14 Meters**
Distance to furnace or incinerator flue	**N/A**

Manse Elementary: Detailed Site Information (Cont.)

Distance between collocated monitors in (meters)	**N/A**
PM instrument within 1 m of the lovol (flow rate <200 liters/minute)	**N/A**
PM instrument within 2 m of the hivol (flow rate >200 liters/minute)	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for annual $PM_{2.5}$ comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**05/07/2015, 11/12/2015**

Figure 9: PM_{10} Monitor located at Manse Elementary, 1020 E. Wilson Road Pahrump, NV.

Glen Oaks: Detailed Site Information

Monitoring began at the Willow Creek site in 2003. The monitor was located at 1500 Red Butte on the roof of a building in which irrigation equipment for a golf course was housed. The monitoring objective of this site was to measure typical concentrations/population oriented of PM_{10} using the beta attenuation monitor. The surrounding area adjacent to this site was fairway/golf course and residential structures. Due to closure of the golf course, the Willow Creek site was relocated to the Glen Oaks sewage treatment plant in 2009. The Glen Oaks site is a short distance away from the existing golf course site and the monitoring objective did not change.

Site Name	**Glen Oaks**
AQS ID	**32-023-0015**
GIS Coordinates	**Lat +36.193469** **Long -116.007584**
Location	**Pahrump**
Address	**145 Glen Oaks St.**
County	**Nye**
Distance to Road	**200 Meters**
Traffic Count	**11,000AADT (2014) Station #0230006**
Groundcover	**Grass/Gravel**
Representative Area	**Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area**

Pollutant, POC	**PM_{10}, 1**
Primary/QA Collocated/Other	**N/A**
Parameter Code	**81102**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Population Exposure**
Network affiliation(s)	**N/A**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial Scale	**Neighborhood**
Monitoring start date	**07/10/2009**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0798-122**
Probe Height	**2.7 Meters**
Dist. fm. supporting structure	**Vertical Distance above 2.7 meter**
Dist. fm. obstructions on roof	**No obstructions on/near the roof**
Dist. fm. Obstructions not on roof (meters)	**15 Meters**
Dist. fm. trees	**12 Meters**
Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors in (meters)	**N/A**

Glen Oaks: Detailed Site Information (Cont.)

PM instrument within 1 m of the lovol (flow rate <200 liters/minute)	**N/A**
PM instrument within 2 m of the hivol (flow rate >200 liters/minute)	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for annual $PM_{2.5}$ comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**05/07/2015, 11/12/2015**

Figure 10: PM_{10} Monitor located at 145 Glen Oaks St., Pahrump, NV.

Linda Street: Detailed Site Information

Monitoring at the Linda Street site was started in 2003. The site is located at 8825 North Linda Street. The beta attenuation monitor is located on the roof of an old railroad box car and represents not only the northern-most site in the Pahrump monitoring network, but the most rural area. There is some residential surrounding this site, but mainly native desert vegetation with little or no surface disturbances. Due to distance from the probe to the nearest roadway, this is a regional scale site. The monitoring objective for this site is upwind background levels of PM_{10} in Pahrump.

Site Name	**Linda Street**
AQS ID	**32-023-0011**
GIS Coordinates	**Lat +36.349408** **Long -116.031976**
Location	**Pahrump**
Address	**8825 N. Linda**
County	**Nye**
Distance to Road	**>160 Meters**
Traffic Count	**1500 AADT (2014) Station #0230009**
Groundcover	**Desert**
Representative Area	**Las Vegas – Henderson, NV-AZ CSA and Pahrump Micropolitan Statistical Area**
Pollutant, POC	**PM_{10}, 1**
Primary/QA Collocated/Other	**N/A**
Parameter Code	**81102**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Upwind Background**
Network affiliation(s)	**N/A**
Monitoring type(s)	**SLAMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**122**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial Scale	**Regional**
Monitoring start date	**05/03/2003**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**N/A**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0798-122**
Probe Height	**6.7 Meters**
Dist. fm. supporting structure	**Vertical Distance above 2.7 meters**
Dist. fm. obstructions on roof	**No obstructions on/near the roof**
Dist. fm. obstructions not on roof (meters)	**21 Meters**
Dist. fm. trees	**10 Meters**

Linda Street: Detailed Site Information (Cont.)

Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors in (meters)	**N/A**
PM instrument within 1 m of the lovol (flow rate <200 liters/minute)	**N/A**
PM instrument within 2 m of the hivol (flow rate >200 liters/minute)	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for annual $PM_{2.5}$ comparison?	**N/A**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**05/07/2015, 11/12/2015**

Figure 11: PM_{10} Monitor located at 8825 N. Linda Pahrump, NV.

Ranchos Aspen Park: Detailed Site Information

The Ranchos Aspen Park site is a Special Purpose Monitoring (SPM) site within the NDEP-BAQP network. The monitoring objective is to determine typical concentration/population exposure.

Site Name	**Ranchos Aspen Park**
AQS ID	**32-005-0007**
GIS Coordinates	**Lat +38.897557** **Long -119.732507**
Location	**Gardnerville**
Address	**820 Lyell Way**
County	**Douglas**
Distance to Road	**20 Meters**
Traffic Count	**5,600 AADT (2014) Station #0050066**
Groundcover	**Gravel**
Representative Area	**Reno-Carson City-Fernley CSA and Gardnerville Ranchos Micropolitan Statistical Area**
Pollutant, POC	**$PM_{2.5}$, 1**
Primary/QA Collocated/Other	**N/A**
Parameter Code	**88101**
Basic monitor objective(s)	**NAAQS**
Site type(s)	**Population exposure**
Network affiliation(s)	**N/A**
Monitoring type(s)	**SPMS**
Instrumental manufacturer and model	**Met One BAM 1020**
Method Code	**170**
FRM/FEM/ARM/other	**FEM**
Collecting Agency	**NDEP-BAQP**
Analytical Lab	**N/A**
Reporting Agency	**NDEP-BAQP**
Spatial Scale	**Neighborhood**
Monitoring start date	**04/01/2013**
Current sampling frequency	**Continuous**
Calculated sampling frequency	**NA**
Sampling season	**01/01-12/31**
Analysis Method	**EQPM-0308-170**
Probe Height	**3.0 Meters**
Dist. fm. supporting structure	**Vertical Distance above 2 meters**
Dist. fm. obstructions on roof	**No obstructions on/near the roof**
Dist. fm. Obstructions not on roof (meters)	**7 Meters**
Dist. fm. trees	**10 Meters**
Distance to furnace or incinerator flue	**N/A**
Distance between collocated monitors in (meters)	**N/A**

Ranchos Aspen Park: Detailed Site Information (Cont.)

PM instrument within 1 m of the lovol (flow rate <200 liters/minute)	**N/A**
PM instrument within 2 m of the hivol (flow rate >200 liters/minute)	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for annual $PM_{2.5}$ comparison?	**Yes**
Frequency of flow rate verification manual PM	**N/A**
Frequency of flow rate verification automated PM	**Monthly**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**05/11/2015, 11/23/2015**

Figure 12: $PM_{2.5}$ Monitor located at Ranchos Aspen Park, 820 Lyell Way Gardnerville, NV.

IMPROVE Station: Detailed Site Information

According to 40 CFR Part 58 Appendix D 4.7.3, "each state shall install and operate at least one $PM_{2.5}$ site to monitor for regional background and regional transport." The NDEP-BAQP utilizes the Jarbidge site to meet this particular requirement.

Site Name	**Jarbidge Wilderness IMPROVE**
AQS ID	**32-007-9000**
GIS Coordinates	**Lat +41.8926** **Long -115.4261**
Location	**Mahoney Forest Service Station**
Address	**Jarbidge Wilderness**
County	**Elko**
Distance to Road	**100 Feet**
Traffic Count	**Negligible (No traffic counts conducted**
Groundcover	**Dirt/Grass**
Representative Area	**Rural (Not in an urban area)**
Pollutant POC	**$PM_{2.5}$, 1**
Primary/QA Collocated/Other	**N/A**
Parameter Code	**88501**
Basic monitor objective(s)	**Research Support**
Site type(s)	**General/Background**
Network affiliation(s)	**N/A**
Monitoring type(s)	**Special Purpose**
Insturmental manufacturer and model	**Crocker Nuclear Lab, IMPROVE Sampler Version II**
Method Code	**N/A**
FRM/FEM/ARM/other	**Other**
Collecting Agency	**US Forest Service (USFS)**
Analytical Lab	**Crocker Nuclear Lab**
Reporting Agency	**US Forest Service (USFS)**
Spatial Scale	**Regional**
Monitoring start date	**01/1988**
Current sampling frequency	**1:3 Filters Collected Weekly**
Sampling season	**01/01-12/31**
Analysis Method	**N/A**
Probe Height	**4 Meters**
Dist. fm. supporting structure	**2 Meters**
Dist. fm. obstructions on roof	**No obstructions on/near the roof**
Dist. fm. obstruction not on roof (meters)	**18 Meters**
Dist. fm. trees	**15 Meters**
PM instrument within 1 m of the lovol (flow rate <200 liters/minute)	**N/A**
PM instrument within 2 m of the hivol (flow rate >200 liters/minute)	**N/A**
Unrestricted air flow	**360 Degrees**
Probe material	**Aluminum**
Residence time	**N/A**
Changes in the next 18 months?	**No**
Suitable for annual $PM_{2.5}$ comparison?	**No**

IMPROVE Station: Detailed Site Information (Cont.)

Frequency of flow rate verification manual PM	**Unable to Determine**
Frequency of flow rate verification automated PM	**N/A**
Frequency of one point QC check (gaseous)	**N/A**
Last Annual Performance Evaluation (gaseous)	**N/A**
Last two semi-annual flow rate audits for PM	**Unable to determine**

Figure 13: Mahoney Forest Service IMPROVE Station, Jarbidge, NV

Appendix A

Comment Submittal Information

The proposed 2016 Ambient Air Monitoring Network Plan is posted on the NDEP website for review and comment for thirty (30) days.

Comments may be emailed to
Daren Winkelman (dwinkelman@ndep.nv.gov)
or mailed to,
Daren Winkelman
Ambient Monitoring Program
Bureau of Air Quality Planning
901 S. Stewart Street, Suite 4001
Carson City, Nevada 89701